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Bindu Rama Rao

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MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER

YIGDALL, MICHAEL J

ART UNIT

PAPER NUMBER

2192

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/701,848

Applicant(s)

RAO ET AL.

Examiner

Michael J. Yigdall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office action is responsive to Applicant's submission filed on May 23, 2006.

Claims 1-22 are pending.

Response to Arguments

2. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection, as set forth below with reference to Herley and Marsh. Applicant's amendment necessitated the new ground(s) of rejection.

Claim Objections

3. Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 18 recites steps that appear to be functionally equivalent to the steps recited in claim 16, as amended.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 17 recites, “if it is determined that the firmware does not need updating.” Claim 18 recites, “if it is determined that the firmware does need updating.” However, there is insufficient antecedent basis for these conditional statements in the claims. Claim 16, as amended, does not recite determining whether the firmware is in need of updating.

Claims 19-21 are dependent upon claim 18 and are therefore indefinite for the same reasons noted above. Furthermore, claims 19 and 21 each recite communicating information “to the server,” for which there is insufficient antecedent basis. Claim 16, as amended, does not recite a server.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 16-19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pub. No. 2002/0073304 to Marsh et al. (art of record, “Marsh”).

With respect to claim 16 (currently amended), Marsh discloses a method for updating firmware or software in an electronic device having an operating system comprising a file system (see, for example, the abstract, which shows updating firmware in an electronic device having an

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operating system, and paragraph 0053, lines 1-6, which further shows a file system), the method comprising:

receiving information for updating the firmware or software (see, for example, paragraph 0039, lines 1-8, which shows receiving information for updating the firmware);

with operating system support (see, for example, paragraph 0033, lines 9-19, which shows operating system support):

storing the information for updating firmware or software in a location in the file system (see, for example, paragraph 0047, lines 6-16, which shows storing the information for updating the firmware in the file system); and

saving, in a memory reference, information identifying the location in the file system of the information for updating firmware or software (see, for example, paragraph 0040, lines 1-9, which shows a memory map identifying the location of the information for updating the firmware); and

without operating system support (see, for example, paragraph 0038, lines 1-15, which shows not relying on operating system support):

accessing the information identifying the location of the information for updating firmware or software in the file system (see, for example, paragraph 0048, lines 1-8, which shows accessing the information identifying the location of the information for updating the firmware); and

updating firmware or software in the electronic device employing the stored information for updating firmware or software by using the information identifying the

location of the information for updating firmware or software in the file system (see, for example, paragraph 0048, lines 8-22, which shows updating the firmware).

With respect to claim 17 (original), the rejection of claim 16 is incorporated, and Marsh further discloses the limitation wherein, if it is determined that the firmware does not need updating, the method further comprises a normal start up of the electronic device (see, for example, paragraph 0047, lines 16-26, which shows terminating the update if it is not needed).

With respect to claim 18 (original), the rejection of claim 16 is incorporated, and Marsh further discloses the limitation wherein, if it is determined that the firmware does need updating, the method further comprises:

retrieving the reference to the information for updating firmware from the memory (see, for example, paragraph 0048, lines 1-8, which shows retrieving the information identifying the location of the information for updating the firmware); and

updating the firmware using the information for updating firmware (see, for example, paragraph 0048, lines 8-22, which shows updating the firmware).

With respect to claim 19 (original), the rejection of claim 18 is incorporated, and Marsh further discloses the limitation wherein the method further comprises communicating a confirmation of the updating of the firmware to the server (see, for example, paragraph 0045, lines 26-29, which show communicating confirmation of updating the firmware).

With respect to claim 22 (original), the rejection of claim 16 is incorporated, and Marsh further discloses the limitation wherein the electronic device retrieves status information from

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the information for updating firmware via the memory reference to determine whether the firmware needs to be updated using the information for updating firmware (see, for example, paragraph 0041, lines 11-19, which shows retrieving information to determine whether the update is needed).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pub. No. 2004/0015952 to Lajoie et al. (art of record, "Lajoie") in view of U.S. Patent No. 6,948,104 to Herley et al. (now made of record, "Herley").

With respect to claim 1 (currently amended), Lajoie discloses a system that facilitates updating of firmware in an electronic device with a file system (see, for example, the abstract, and the file system illustrated within non-volatile memory 210 in FIG. 2), the system comprising:

an electronic device (see, for example, the electronic device illustrated in FIG. 2) comprising:

at least one of volatile and non-volatile memory (see, for example, non-volatile memory 210 and RAM or volatile memory 280 in FIG. 2).

Lajoie further discloses software that downloads specific information for updating firmware (see, for example, paragraph 0034, lines 1-4), but does not expressly disclose:

loader software that supports a plurality of loaders, wherein, during operation, each of the plurality of loaders performs downloading of specific information for updating firmware.

However, Herley discloses loader software (see, for example, transparent download module 145 in FIG. 4) that supports a plurality of loaders (see, for example, column 9, lines 17-21, which shows a plurality of downloaders), wherein, during operation, each of the plurality of loaders performs downloading of specific information (see, for example, column 9, lines 21-29). The software manages and adapts the downloading based on network congestion (see, for example, column 11, line 55 to column 12, line 7), so as to complete the download without interfering with other traffic (see, for example, column 5, lines 18-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the system of Lajoie with loader software that supports a plurality of loaders, such as taught by Herley, so as to manage and adapt the downloading of specific information for updating firmware based on network congestion and complete the download without interfering with other traffic.

Lajoie in view of Herley further discloses:

update software that supports retrieving the information for updating firmware in the electronic device (see, for example, upgrade program 320 in FIG. 3, and paragraph 0031, lines 1-4, which shows that the upgrade program retrieves information for updating the firmware); and

communication software that administers communicating the information for updating firmware from a server (see, for example, communication protocol stack 330 in FIG. 3, and paragraph 0033, lines 16-18, which shows communicating with a server).

With respect to claim 2 (previously presented), the rejection of claim 1 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the system further comprises a driver software that communicates, to the update software, information about the retrieved information for updating firmware in the electronic device (see, for example, paragraph 0033, lines 11-16 and paragraph 0042, lines 1-4, which show that the application program functions as driver software to transfer requests to the upgrade program, i.e. to communicate information to the upgrade program regarding the information for updating the firmware).

With respect to claim 3 (original), the rejection of claim 1 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the server is an external system (see, for example, upgrade server 110 in FIG. 1).

With respect to claim 4 (original), the rejection of claim 1 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the server is a local file system (see, for example, paragraph 0031, lines 20-23, which shows upgrading the firmware locally).

With respect to claim 5 (original), the rejection of claim 1 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the update software comprises:

loading software that retrieves updating information from the server (see, for example, paragraph 0031, lines 1-4, which shows retrieving information from the server for updating the firmware);

updating software that applies the retrieved information for updating firmware in the electronic device (see, for example, paragraph 0034, lines 1-4, which shows applying the information and thereby updating the firmware);

security software that supports secure communication between the server and the electronic device (see, for example, paragraph 0041, lines 5-9, which shows encryption means for supporting secure communication);

setting software that sets values of data to indicate information about the information for updating firmware (see, for example, paragraph 0034, lines 4-8, which shows setting values in a header to indicate information about the information for updating the firmware); and

memory management software that manages accessing and manipulating information in the memory (see, for example, paragraph 0026, lines 12-14, which shows a library of memory management functions for accessing and manipulating information in the memory).

With respect to claim 6 (original), the rejection of claim 5 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the update software further comprises a reference comprising at least one parameter related to the information for updating firmware (see, for example, paragraph 0029, lines 1-4 and Table 1, which show parameters in the header related to the information for updating the firmware).

With respect to claim 7 (original), the rejection of claim 6 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the at least one parameter comprises a state flag (see, for example, paragraph 0029, lines 1-4 and Table 1, which show a 1-byte client state variable or flag).

Although the state flag taught by Lajoie has a size of 1 byte, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the flag with a size of 4 bytes, as recited in the claim. It is well known in the art that 1 byte of information, such as the state flag of Lajoie, can be equivalently represented within a 4-byte space.

With respect to claim 8 (original), the rejection of claim 6 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the at least one parameter comprises an address referencing the information for updating firmware (see, for example, paragraph 0029, Table 1, which shows an application end page parameter that references the information for updating the firmware, and paragraph 0028, lines 1-13, which shows that the page numbers correspond to addresses in the memory).

With respect to claim 9 (original), the rejection of claim 6 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the at least one parameter comprises an address referencing a backup section (see, for example, paragraph 0029, Table 1, which shows a last page parameter; paragraph 0044, lines 10-14, which shows that the last page parameter is a backup means for recovering from a communication failure; and paragraph 0028, lines 1-13, which shows that the page numbers correspond to addresses in the memory).

With respect to claim 10 (original), the rejection of claim 6 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the at least one parameter comprises a CRC value (see, for example, paragraph 0039, lines 2-5, which shows a CRC-16 value).

Although the CRC value taught by Lajoie has a size of 16 bits or 2 bytes, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a 4-byte CRC value, as recited in the claim. It is well known in the art that a 4-byte CRC value can be used to provide greater error detection reliability than a 2-byte CRC value.

With respect to claim 11 (original), the rejection of claim 5 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the security software controls information in the electronic device, wherein the information indicates whether the firmware in the electronic device needs updating (see, for example, paragraph 0038, lines 1-10 and paragraph 0039, lines 5-9, which shows the firmware integrity checker serving as security software for indicating whether the firmware needs to be updated).

With respect to claim 12 (original), the rejection of claim 6 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the security software utilizes the setting software to set the value of the at least one parameter (see, for example, paragraph 0038, lines 11-15, which shows storing or setting the client state parameter in the header).

With respect to claim 13 (original), the rejection of claim 6 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the updating software uses the reference to determine whether the firmware in the electronic device needs updating (see, for example, the

flowchart illustrated in FIG. 5, which shows using the client state reference to determine whether the firmware needs to be updated).

With respect to claim 14 (original), the rejection of claim 6 is incorporated, and Lajoie in view of Herley further discloses the limitation wherein the updating software uses the reference to determine the location of the information for updating firmware (see, for example, paragraph 0034, lines 4-8, which shows using the header to determine the length or location of the information for updating the firmware).

With respect to claim 15 (original), the rejection of claim 1 is incorporated. Lajoie in view of Herley discloses downloading information from the server for updating the firmware (see, for example, paragraph 0034, lines 1-4), but does not expressly disclose the limitation wherein the update software utilizes a uniform resource locator (URL) to download information for updating firmware from the server.

However, Lajoie further discloses that the server downloads the information for updating the firmware from a firmware provider over an Internet connection (see, for example, paragraph 0022, lines 5-7 and paragraph 0023, lines 1-5). It is well known in the art that an addressing or locating means, such as a uniform resource locator, is necessary in order to download such information over an Internet connection.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the update software taught by Lajoie to download the information for updating the firmware by way of an Internet connection, as also taught by Lajoie, and accordingly, to use a URL in order to locate the resources to download.

10. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marsh, as applied to claim 18 above, in view of Lajoie.

With respect to claim 20 (original), the rejection of claim 18 is incorporated. Marsh does not expressly disclose the limitation wherein the method further comprises testing the updated firmware for errors.

However, Lajoie discloses testing updated firmware for errors (see, for example, paragraph 0031, lines 8-14) to determine whether to retry the update (see, for example, paragraph 0031, lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the method of Marsh with the testing features of Lajoie, so as to determine whether to retry the update due to errors.

With respect to claim 21 (original), the rejection of claim 20 is incorporated, and Marsh in view of Lajoie further discloses the limitation wherein the method further comprises communicating any errors found to the server (see, for example, Lajoie, paragraph 0031, lines 17-20, which shows communicating a message to the server if errors are found).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (571) 272-3707. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJ

Michael J. Yigdall
Examiner
Art Unit 2192

mjy



TUAN DAM
SUPERVISORY PATENT EXAMINER